

AMENDMENTS TO THE CLAIMS

1-32. (Cancelled)

33. (Currently Amended) A light emitting diode (LED) comprising:
a first gallium nitride layer;
a super lattice structure including InGaN on an $In_xGa_{1-x}N/In_yGa_{1-y}N$ multi-layer formed over the first gallium nitride layer;
an active layer on the super lattice structure including InGaN formed over the $In_xGa_{1-x}N/In_yGa_{1-y}N$ multi-layer; and
a second gallium nitride layer formed over on the active layer,
wherein the super lattice structure including InGaN $In_xGa_{1-x}N/In_yGa_{1-y}N$ multi-layer has a plurality of pits formed thereon, and
wherein a number of the plurality of pits is 50 or less per area of 5μm×5μm.

34. (Previously Presented) The LED according to claim 33, wherein the active layer comprises an InGaN/InGaN structure of a multi-quantum well structure.

35-36. (Cancelled)

37. (Currently Amended) The LED according to claim 33, wherein the super lattice structure including InGaN includes an $In_xGa_{1-x}N/In_yGa_{1-y}N$ multi-layer is formed to have a super lattice structure.

38. (Currently Amended) The LED according to claim 33, wherein ~~each layer of the $In_xGa_{1-x}N/In_yGa_{1-y}N$ multi-layer~~ the super lattice structure including InGaN has a thickness of 1~3000 Å.

39. (Currently Amended) The LED according to claim 33, wherein the super lattice structure including InGaN $In_xGa_{1-x}N/In_yGa_{1-y}N$ multi-layer has a photoluminescence characteristic of a yellow band intensity/N-doped GaN intensity ratio of 0.4 or below.

40. (Currently Amended) The LED according to claim 33, wherein the active layer is directly ~~formed~~ on the super lattice structure including InGaN.

$In_xGa_{1-x}N/In_yGa_{1-y}N$ multi-layer

41. (Previously Presented) The LED according to claim 33, wherein the LED is blue LED.

42. (Currently Amended) A method for manufacturing a light emitting device, the method comprising the steps of:

forming a buffer layer;

forming an N-type gallium nitride layer on the buffer layer;

forming an $\text{In}_x\text{Ga}_{1-x}\text{N}/\text{In}_y\text{Ga}_{1-y}\text{N}$ multi-layer above a super lattice structure including InGaN on the N-type gallium nitride layer, the $\text{In}_x\text{Ga}_{1-x}\text{N}/\text{In}_y\text{Ga}_{1-y}\text{N}$ multi-layer including layers of first and second growth temperatures;

forming an active layer above on the super lattice structure including $\text{InGaN}/\text{In}_x\text{Ga}_{1-x}\text{N}/\text{In}_y\text{Ga}_{1-y}\text{N}$ multi-layer; and

forming a P-type gallium nitride layer above on the active layer.

wherein the active layer is grown at a temperature lower than the first and second temperatures,

wherein the super lattice structure including InGaN has a plurality of pits formed thereon and wherein a number of the plurality of pits is 50 or less per area of $5\mu\text{m} \times 5\mu\text{m}$, and

wherein the buffer layer is grown at a first temperature, and the super lattice structure is grown at a second and a third temperature higher than the first temperature, and the active layer is grown at a fourth temperature higher than the first temperature and lower than the second and third temperature.

and

wherein the $\text{In}_x\text{Ga}_{1-x}\text{N}/\text{In}_y\text{Ga}_{1-y}\text{N}$ multi-layer has a plurality of pits formed thereon.

43. (Previously Presented) The method according to claim 42, wherein the active layer is grown at 600~800 °C.

44. (Previously Presented) The method according to claim 42, wherein the active layer comprises an $\text{InGaN}/\text{InGaN}$ structure of a multi-quantum well structure.

45-46. (Cancelled)

47. (Currently Amended) The method according to claim 42, wherein the super lattice structure including InGaN includes an $In_xGa_{1-x}N/In_yGa_{1-y}N$ multi-layer is formed to have a super lattice structure.

48. (Currently Amended) The method according to claim 42, wherein each layer of the super lattice structure including $InGaN/In_xGa_{1-x}N/In_yGa_{1-y}N$ multi-layer has a thickness of 1~3000 Å.

49. (Currently Amended) The method according to claim 42, wherein the super lattice structure including $InGaN/In_xGa_{1-x}N/In_yGa_{1-y}N$ multi-layer has a photoluminescence characteristic of a yellow band intensity/N-doped GaN intensity ratio of 0.4 or below.

50. (Currently Amended) The method according to claim 42, wherein the active layer is directly formed on the super lattice structure including $InGaN/In_xGa_{1-x}N/In_yGa_{1-y}N$ multi-layer.

51. (Currently Amended) A light emitting diode (LED), comprising:

a substrate;

a buffer layer on the substrate;

an undoped GaN layer on the buffer layer;

an N-type GaN layer directly formed on the undoped GaN layer;
a super lattice structure including InGaN directly on In_xGa_{1-x}N/In_yGa_{1-y}N multi-layer
directly formed on the N-type GaN layer;
an active layer directly formed on the In_xGa_{1-x}N/In_yGa_{1-y}N multi-layer on the super
lattice structure including InGaN; and
a P-type GaN layer formed on the active layer,
wherein the super lattice structure including InGaN has a plurality of pits thereon and
wherein a number of the plurality of pits is 50 or less per area of 5μm×5μm.
In_xGa_{1-x}N/In_yGa_{1-y}N multi-layer has a plurality of pits formed thereon.

52. (Previously Presented) The LED according to claim 51, further comprising:

a GaN layer between the buffer layer and the undoped GaN layer.

53. (Currently Amended) The LED according to ~~claim 53~~claim 52, wherein the undoped GaN layer is directly formed on the GaN layer.

54. (Previously Presented) The LED according to claim 51, wherein the active layer comprises:

an InGaN/InGaN structure of a multi-quantum well structure.

55. (New) The method according to claim 42, further comprising:
forming an undoped GaN layer on the buffer layer before forming the N-type gallium nitride layer.

56. (New) The method according to claim 55, wherein the undoped GaN layer is grown at a fifth temperature higher than the first temperature, the second temperature, the third temperature and the fourth temperature.

57. (New) The method according to claim 42, further comprising:
forming a plurality of pits between the active layer and the P-type gallium nitride layer.